

S.1 The National Environmental Policy Act

DOE prepared the *Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* to provide the background, data, and analyses to help decisionmakers and the public understand the potential environmental impacts of the proposed repository. The Department issued the Draft EIS, dated July 1999, for public comment; a 199-day comment period began August 13, 1999, and ended on February 28, 2000. In May 2001, DOE issued the *Supplement to the Draft Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada*, which was the subject of a public comment period that ended on July 6, 2001. The comment period was extended to August 13, 2001, for about 700 reviewers inadvertently omitted from the mailing list. In Volume III of this EIS, DOE has presented and responded to all comments on the Draft EIS and the Supplement to the Draft EIS received by August 31, 2001. All comments received by DOE after August 31, 2001, were responded to as time and resources permitted. However, all comments received after August 31, 2001, whether or not responded to, were considered by the Department. Based on this consideration, the Department concluded that none raised new issues not already reflected in timely comments and already considered. DOE has prepared this *Final Environmental Impact Statement for a Geologic Repository for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada* consistent with the National Environmental Policy Act (NEPA) and the Nuclear Waste Policy Act, as amended. This Final EIS updates information in the Draft EIS and Supplement, provides additional information, and responds to public comments.

S.2 Purpose and Need for Agency Action

S.2.1 PURPOSE AND NEED

For many years civilian and defense-related activities have produced spent nuclear fuel and high-level radioactive waste. These materials have accumulated—and continue to accumulate—at 72 commercial and 5 DOE sites across the United States. Figure S-1 shows the locations of these sites and Yucca Mountain.

In passing the Nuclear Waste Policy Act in 1982, Congress affirmed that the Federal Government is responsible for the permanent disposal of spent nuclear fuel and high-level radioactive waste. In the 1987 amendments to the Act, Congress directed the Secretary of Energy to determine whether to recommend that the President approve the Yucca Mountain site for development of a repository for the permanent disposal of these materials.

S.2.2 BACKGROUND

DOE is responsible for implementing a permanent solution for the management of spent nuclear fuel and high-level radioactive waste. *Spent nuclear fuel* is fuel that has been withdrawn from a nuclear reactor following irradiation; it consists mostly of uranium, and is usually intensely radioactive because it also contains a high level of radioactive nuclear fission products. Commercial spent nuclear fuel was used in civilian nuclear reactors to produce electricity. The majority of DOE spent nuclear fuel comes from defense production reactors, naval propulsion plant reactors, and test and experimental reactors. In addition to conventional uranium fuel, DOE is responsible for the disposition of weapons-usable plutonium that is surplus to national security needs. This EIS includes analysis of surplus weapons-usable plutonium that DOE plans to convert to mixed-oxide (uranium and plutonium) fuel as part of the commercial spent nuclear fuel inventory and surplus weapons-grade plutonium that DOE plans to immobilize and include as part of the high-level radioactive waste inventory.